



SEQUENCE LISTING

(1) GENERAL INFORMATION:

- T340X
- (i) APPLICANT: Harpold, Michael M.
Ellis, Stephen B.
Brust, Paul
Akong, Michael
Velicelebi, Gonul
- (ii) TITLE OF INVENTION: HUMAN NEURONAL NICOTINIC ACETYLCHOLINE
RECEPTOR COMPOSITIONS AND METHODS
- (iii) NUMBER OF SEQUENCES: 12
- (iv) CORRESPONDENCE ADDRESS:
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(C) CITY: Los Angeles
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(E) COUNTRY: USA
(F) ZIP: 90071
- (v) COMPUTER READABLE FORM:
(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.25
- B' (vi) CURRENT APPLICATION DATA:
(A) APPLICATION NUMBER: US 07/938,154
(B) FILING DATE: 30-NOV-1992
(C) CLASSIFICATION:
- (vii) PRIOR APPLICATION DATA:
(A) APPLICATION NUMBER: WO PCT/US91/02311
(B) FILING DATE: 03-APR-1991
- (vii) PRIOR APPLICATION DATA:
(A) APPLICATION NUMBER: US 07/504,455
(B) FILING DATE: 03-APR-1990
- (viii) ATTORNEY/AGENT INFORMATION:
(A) NAME: Reiter, Stephen E.
(B) REGISTRATION NUMBER: 31,192
(C) REFERENCE/DOCKET NUMBER: P41 9380
- (ix) TELECOMMUNICATION INFORMATION:
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(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 195 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: both
(D) TOPOLOGY: both
- (ii) MOLECULE TYPE: cDNA
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(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 1..195
- (D) OTHER INFORMATION: /note= "Human neuronal NACHR
alpha-2 cDNA shown as top sequence of Fig 7A."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GCTAAACAGG AGTGGAGCGA CTACAACTG CGCTGGAACC CCGCTGATTT TGGCAACATC 60
ACATCTCTCA GGGTCCCTTC TGAGATGATC TGGATCCCCG ACATTGTTCT CTACAACAAA 120
AATGGGGAGT TTGCAGTGAC CCACATGACC AAGGCCACC TCTTCTCCAC GGGCACTGTG 180
CACTGGGTGC CCCCC 195

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 209 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 1..209
- (D) OTHER INFORMATION: /note= "Rat neuronal NACHR alpha-2
cDNA shown as the bottom nucleotide sequence in
Figure 7A."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

CCAATGTCTG GCTAAAGCAG GAATGGAATG ACTACAAGCT GCGCTGGGAC CCGGCTGAGT 60
TTGGCAATGT CACCTCCCTG CGCGTCCCTT CAGAGATGAT CTGGATCCCA GACATTGTCC 120
TCTACAACAA TGCAGATGGG GAGTTTGCGG TGACCCACAT GACCAAGGCT CACCTCTTCT 180
TCACGGGCAC TGTGCACTGG GTGCCCCCA 209

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 202 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 1..202
- (D) OTHER INFORMATION: /note= "Human neuronal NACHR
alpha-2 cDNA shown as top sequence in Fig 7B."

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

CCCCCTTCGAC CAGCAGAACT GCAAGATGAA GTTTGGCTCC TGGACTTATG ACAAGGCCAA	60
GATCGACCTG GAGCAGATGG AGCAGACTGT GGACCTGAAG GACTACTGGG AGAGCGGCCA	120
GTGGGCCATC GTCAATGCCA CGGGCACCTA CAACAGCAAG AAGTACGACT GCTGCGCCGA	180
GATCTACCCC GACGTCACCT AG	202

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 250 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..250
- (D) OTHER INFORMATION: /note= "Rat neuronal NACHR alpha-2
cDNA shown as bottom sequence in Fig 7B."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

CCCCCTTCGAC CAGCAGAACT GCAAGATGAA GTTTGGCTCC TGGACATATG ACAAGGCCAA	60
GATCGATCTG GAGCAGATGG AGAGGACAGT GGACCTGAAG GACTACTGGG AGAGTGGCGA	120
GTGGGCCATT ATCAATGCCA CCGGAACCTA TAACAGTAAG AAGTACGACT GCTGCGCGGA	180
GATCTACCCC GATGTCACCT ACTACTTTGT GATCCGGCGG CTGCCGCTGT TCTATACCAT	240
CAACCTCATC	250

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 278 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..278
- (D) OTHER INFORMATION: /note= "Human neuronal NACHR
alpha-3 cDNA shown as top sequence in Fig 8A."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

CTGGCAGCAG AGGCTGAGCA CCGTCTATTT GAGCGGCTGT TTGAAGATTA CAATGAGATC	60
ATCCGGCCTG TAGCCAACGT GTCTGACCCA GTCATCATCC ATTTGAGGT GTCCATGTCT	120
CAGCTGGTGA AGGTGGATGA AGTAAACCAG ATCATGGAGA CCAACCTGTG GCTCAAGCAA	180
ATCTGGAATG ACTACAAGCT GAAGTGAAC CCCTCTGACT ATGGTGGGGC AGAGTTCATG	240
CGTGTCCCTG CACAGAAGAT CTGGAAGCCA GACATTGT	278

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Cont'
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(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 300 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..300
- (D) OTHER INFORMATION: /note= "Rat neuronal NACHR alpha-3 cDNA shown as bottom sequence of Fig 8A."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

GATGCTGCTG CCAGCGGCCA GTGCCTCAGA AGCTGAGCAC CGCCTGTTCC AGTACCTGTT	60
CGAAGATTAC AACGAGATCA TCCGGCCAGT GGCTAATGTG TCCCATCCAG TCATCATCCA	120
GTTTGAGGTG TCCATGTCTC AGCTGGTGAA GGTGGATGAA GTAAACCAGA TCATGGAAAC	180
CAACCTGTGG CTGAAGCAAA TCTGGAATGA CTACAAGCTG AAATGGAAAC CCTCTGACTA	240
CCAAGGGGTG GAGTTCATGC GTGTTCTCCTGC AGAGAAGATC TGGAAACCAG ACATCGTACT	300

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 305 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..305
- (D) OTHER INFORMATION: /note= "Human neuronal NACHR alpha-3 cDNA shown as top sequence in Fig 8B."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

TTCCAGGTGG ACGACAAGAC CAAAGCCTTA CTCAAGTACA CTGGGGACGT GACTTGGATA	60
CCTCCGGCCA TCTTTAAGAG CTCCTGTAAA ATCGACGTGA CCTACTTCCC GTTTGATTAC	120
CAAAACTGTA CCATGAAGTT CGGTTCTTGG TCCTACGATA AGGCGAAAAT CGATCTGGTC	180
CTGATCGGCT CTTCCATGAA CCTCAAGGAC TATTGGGAGA GCGGCGAGTG GGCCATCATC	240
AAAGCCCCAG GCTACAAACA CGACATCAAG TACAACTGCT GCGAGGAGAT CTACCCCGAC	300
ATCAC	305

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(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 350 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: both
 (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
 (B) LOCATION: 1..350
 (D) OTHER INFORMATION: /note= "Rat neuronal NACHR alpha-3
 cDNA shown as bottom sequence in Fig 8B."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

GTACAACAAC GCTGATGGGG ATTTCCAGGT GGATGACAAG ACCAAAGCTC TACTCAAGTA	60
CACAGGAGAA GTGACTTGGA TCCCGCCGGC CATCTTTAAG AGCTCATGCA AAATCGACGT	120
GACCTACTTC CCATTGCGACT ACCAAAACTG CACCATGAAG TTCGGCTCCT GGTCTACGA	180
CAAGGCAAAG ATCGACCTGG TCCTCATCGG CTCCTCCATG AACCTCAAGG ACTACTGGGA	240
GAGTGGCGAG TGGGCTATCA TTAAAGCCCC GGGCTACAAA CATGAAATCA AGTACAACTG	300
CTGTGAGGAG ATCTACCAAG ACATCACGTA CTCGCTGTAC ATCCGTCGCC	350

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1521 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: both
 (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
 (B) LOCATION: 1..1521
 (D) OTHER INFORMATION: /note= "Human neuronal NACHR beta-2
 cDNA shown as top sequence in Fig 9."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

ATGCCCGCTG GCATGGCCCG GCGCTGCGGC CCCGTGGCGC TGCTCCTTGG CTCGGCCTC	60
CTCCGGCTGT GCTCAGGGGT GTGGGGTACG GATACAGAGG AGCGGCTGGT GGAGCATCTC	120
CTGGATCCTT CCCGCTACAA CAAGCTTATC CGCCCAGCCA CCAATGGCTC TGAGCTGGTG	180
ACAGTACAGC TTATGGTGTG ACTGGCCCAG CTCATCAGTG TGCATGAGCG GGAGCAGATC	240
ATGACCACCA ATGTCTGGCT GACCCAGGAG TGGGAAGATT ATCGCCTCAC CTGGAAGCCT	300
GAAGAGTTTG ACAACATGAA GAAAGTTCGG CTCCCTTCCA AACACATCTG GCTCCAGAT	360
GTGGTCCTGT ACAACAATGC TGACGGCATG TACGAGGTGT CCTTCTATTC CAATGCCGTG	420
GTCTCCTATG ATGGCAGCAT CTTCTGGCTG CCGCCTGCCA TCTACAAGAG CGCATGCAAG	480

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ATTGAAGTAA AGCACTTCCC ATTTGACCAG CAGAACTGCA CCATGAAGTT CCGTTCGTGG 540
 ACCTACGACC GCACAGAGAT CGACTTGGTG CTGAAGAGTG AGGTGGCCAG CCTGGACGAC 600
 TTCACACCTA GTGGTGAGTG GGACATCGTG GCGCTGCCGG GCCGCGCAA CGAGAACCCC 660
 GACGACTCTA CGTACGTGGA CATCACGTAT GACTTCATCA TTCGCCGCAA GCCGCTCTTC 720
 TACACCATCA ACCTCATCAT CCCCTGTGTG CTCATCACCT CGCTAGCCAT CCTTGTCTTC 780
 TACCTGCCAT CCGACTGTGG CGAGAAGATG ACGTTGTGCA TCTCAGTGCT GCTGGCGCTC 840
 ACGGTCTTCC TGCTGCTCAT CTCCAAGATC GTGCCTCCCA CCTCCCTCGA CGTGCCGCTC 900
 GTCGGCAAGT ACCTCATGTT CACCATGGTG CTTGTACCT TCTCCATCGT CACCAGCGTG 960
 TGCGTGCTCA ACGTGCACCA CCGCTCGCCC ACCACGCACA CCATGGCGCC CTGGGTGAAG 1020
 GTCGTCTTCC TGGAGAAGCT GCCCGCGCTG CTCTTCATGC AGCAGCCACG CCATCATTCG 1080
 GCCCGTCAGC GCCTGCGCCT GCGGCGACGC CAGCGTGAGC GCGAGGGCGC TGGAGCCCTC 1140
 TTCTTCCGCG AAGCCCCAGG GGCCGACTCC TGCACGTGCT TCGTCAACCG CGCGTCGGTG 1200
 CAGGGGTTGG CCGGGGCCTT CGGGGCTGAG CCTGCACCAG TGGCGGGCCC CGGGCGCTCA 1260
 GGGGAGCCGT GTGGCTGTGG CCTCCGGGAG GCGGTGGACG GCGTGCGCTT CATCGCAGAC 1320
 CACATGCGGA GCGAGGACGA TGACCAGAGC GTGAGTGAGG ACTGGAAGTA CGTCGCCATG 1380
 GTGATCGACC GCCTCTTCCT CTGGATCTTT GTCTTTGTCT GTGTCTTTGG CACCATCGGC 1440
 ATGTTCTTGC AGCCTCTCTT CCAGAACTAC ACCACCACCA CCTTCCTCCA CTCAGACCAC 1500
 TCAGCCCCCA GCTCCAAGTG A 1521

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1512 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..1512
- (D) OTHER INFORMATION: /note= "Rat neuronal NACHR beta-2 cDNA shown as bottom nucleotide sequence in Figure 9."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

ATGCTGGCTT GCATGGCCGG GCACTCCAAC TCAATGGCGC TGTTTCAGCTT CAGCCTTCTT 60
 TGGCTGTGCT CAGGGGTTTT GGGAAGTAC ACAGAGGAGC GGCTAGTGGA GCATCTCTTA 120
 GATCCCTCCC GCTATAACAA GCTGATTCGT CCAGCTACTA ACGGCTCTGA GCTGGTGACT 180
 GTACAGCTCA TGGTATCATT GGCTCAGCTC ATTAGTGTGC ACGAGCGGGA GCAGATCATG 240
 ACCACCAATG TCTGGCTGAC CCAGGAGTGG GAAGATTACC GCCTCACATG GAAGCCTGAG 300

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GACTTCGACA ATATGAAGAA AGTCCGGCTC CCTTCCAAAC ACATCTGGCT CCCAGATGTG 360
GTTCTATACA ACAATGCTGA CGGCATGTAC GAAGTCTCCT TCTATTCCAA TGCTGTGGTC 420
TCCTATGATG GCAGCATCTT TTGGCTACCA CCTGCCATCT ACAAGAGTGC ATGCAAGATT 480
GAGGTGAAGC ACTTCCCATT TGACCAGCAG AATTGCACCA TGAAGTTTCG CTCATGGACC 540
TACGACCGTA CTGAGATTGA CCTGGTGCTC AAAAGTGATG TGGCCAGTCT GGATGACTTC 600
ACACCCAGCG GGGAGTGGGA CATCATCGCA CTGCCAGGCC GACGCAACGA GAACCCAGAC 660
GACTCCACCT ATGTGGACAT CACCTATGAC TTCATCATTC GTCGCAAACC ACTCTTCTAC 720
ACTATCAACC TCATCATCCC CTGCGTACTC ATCACCTCGC TGGCCATCCT GGTCTTCTAC 780
CTGCCCTCAG ACTGTGGTGA AAAGATGACA CTTTGTATTT CTGTGCTGCT AGCACTCACG 840
GTGTTCTGCTG TGCTCATCTC CAAGATTGTG CCTCCCACCT CCCTCGATGT ACCGCTGGTG 900
GGCAAGTACC TCATGTTTAC CATGGTGCTA GTCACCTTCT CCATCGTCAC CAGCGTGTGT 960
GTGCTCAATG TGCACCACCG CTCGCCTACC ACGCACACCA TGGCCCCCTG GGTCAAGGTG 1020
GTCTTCCTGG AGAAGCTGCC CACCCTGCTC TTCCTGCAGC AGCCACGCCA CCGCTGTGCA 1080
CGTCAGCGTC TGCCTTGAG GAGGCGCCAG CGAGAGCGTG AGGGCGAGGC GGTTCCTTC 1140
CGTGAAGGTC CTGCGGCTGA CCCATGTACC TGCTTTGTCA ACCCTGCATC AGTGCAGGGC 1200
TTGGCTGGGG CTTTCCGAGC TGAGCCCACT GCAGCCGGCC CGGGGCGCTC TGTGGGGCCA 1260
TGCAGCTGTG GCCTCCGGGA AGCAGTGGAT GGCGTACGCT TCATTGCGGA CCACATGCGA 1320
AGTGAGGATG ATGACCAGAG TGTGAGGGAG GACTGGAAAT ACGTTGCCAT GGTGATCGAC 1380
CGCCTGTTCC TGTGGATCTT TGTCTTTGTC TGTGTCTTTG GGACCGTCGG CATGTTCTCTG 1440
CAGCCTCTCT TCCAGAACTA CACTGCCACT ACCTTCCTCC ACCCTGACCA CTCAGCTCCC 1500
AGCTCCAAGT GA 1512

(2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

AGCTTTCGAT ATCAGAATTC G

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(2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 21 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

AGCTCGAATT CTGATATCGA A

21

41